



## Early Journal Content on JSTOR, Free to Anyone in the World

This article is one of nearly 500,000 scholarly works digitized and made freely available to everyone in the world by JSTOR.

Known as the Early Journal Content, this set of works include research articles, news, letters, and other writings published in more than 200 of the oldest leading academic journals. The works date from the mid-seventeenth to the early twentieth centuries.

We encourage people to read and share the Early Journal Content openly and to tell others that this resource exists. People may post this content online or redistribute in any way for non-commercial purposes.

Read more about Early Journal Content at <http://about.jstor.org/participate-jstor/individuals/early-journal-content>.

JSTOR is a digital library of academic journals, books, and primary source objects. JSTOR helps people discover, use, and build upon a wide range of content through a powerful research and teaching platform, and preserves this content for future generations. JSTOR is part of ITHAKA, a not-for-profit organization that also includes Ithaka S+R and Portico. For more information about JSTOR, please contact [support@jstor.org](mailto:support@jstor.org).

**Stomach Movements.**<sup>1</sup>—One of the most interesting papers in the last number of the *American Journal of Physiology* is that by W. B. Cannon on the movements of the stomach studied by Röntgen rays. Animals, chiefly cats, were fed upon food containing a small amount of bismuth subnitrate, which, being opaque to the rays, brings the form of the stomach clearly to view and thus allows the movements of normal digestion to be observed with ease. The cardiac portion of the stomach acts as a reservoir, in which, however, salivary digestion probably goes on. The pyloric portion is the seat of continuous constriction waves, which course from near the middle of the stomach to the pylorus. These thoroughly mix the food with the gastric juice, triturate it, and at intervals discharge some of it into the intestine, this operation being kept up till the stomach is empty. A very remarkable condition observed was that the stomach movements were almost instantly inhibited whenever the cat showed signs of anxiety, rage, or distress—a practical hint as to post-prandial occupations.

G. H. P.

**Paired Fins of Fishes.**<sup>2</sup>—In the last number of the *Jenaische Zeitschrift*, Dr. H. Brans gives an exhaustive account of the innervation of the paired fins of selachians, holocephala, and dipnoi. About half the paper is taken up with detailed anatomical descriptions, the substance of which is clearly summarized in a concluding table. The remainder of the paper is devoted to a discussion of the origin of vertebrate extremities, in which the author defends with some show of reason Gegenbaur's archipterygium theory and attempts to refute the more usually accepted theory of the continuous lateral fin. The paper is refreshing in that its author claims that in the settlement of morphological questions comparative anatomy should have a hearing as well as embryology.

G. H. P.

**Anatomy of Salpa.**<sup>3</sup>—Dr. M. M. Metcalf has published as a "separate" a paper of some twenty-six pages on the eyes and sub-neural gland of Salpa. The histology and embryology of the eyes in

<sup>1</sup> Cannon, W. B. The Movements of the Stomach, Studied by Means of the Röntgen Rays. *The American Journal of Physiology*, vol. i, pp. 359, 382, 1898.

<sup>2</sup> Brans, H. Ueber die Innervation der paarigen Extremitäten bei Selachiern, Holocephalen und Dipnoern. Ein Beitrag zur Gliedmassenfrage. *Jenaische Zeitschrift*, Bd. xxxi, pp. 239, 468, 1898.

<sup>3</sup> Metcalf, M. M. The Eyes and Subneural Gland of Salpa. The Friedenwald Co., Baltimore, 1898.

the solitary and chain forms of *Cyclosalpa* are given in detail, and an account of the subneural gland in this genus is appended. The paper is an abstract of a dissertation accepted at Johns Hopkins University for the degree of doctor of philosophy.

G. H. P.

### **Relationships of American and European Mammalian Faunas.**

— Mr. A. Smith Woodward concludes a most valuable *résumé* of the history of the mammalian fauna of Europe and America (*Natural Science*, May, 1898) with the following considerations as to the place of origin of the various elements in the two worlds. At the base of the Eocene it is evident that the faunas of the east and the west were essentially identical. As they are traced upwards they gradually diverge.

The first noteworthy difference is the great development of the Condylarthra in America, and the rise in the Eocene of the large specialized Amblypoda, of which only a single genus (*Coryphodon*) has been found in the corresponding fauna of Europe. On the other hand, the still larger hoofed animals of the sub-order Proboscidea seem to have originated in the Old World, and did not reach America until the late Pliocene.

The Perissodactyla—the tapirs, rhinoceroses, and horses—appear to have advanced on a parallel course on the two continents, though in America both the rhinoceroses and the horses became extinct at the close of the Pliocene, the former without acquiring the characteristic horn.

Among Artiodactyla, both the deer and pigs seem to have been approximately parallel in their development in both continents, only differing in some minor branches, which soon became extinct. The camels, however, are clearly American throughout, only wandering into the Old World by Asia in the Pliocene. It is almost equally probable that the oxen originated in the Old World.

Among Carnivora, the Creodonta are both American and European; but on the former continent they only pass upwards into the dogs (*Canidæ*), weasels (*Mustelidæ*), and the aberrant cats of the family *Nimravidæ*, while in Europe they are succeeded, not merely by these families, but also by the *Viverridæ*, *Hyænidæ*, *Felidæ*, and *Ursidæ*. The viverroids and hyænas never reached America, but the true cats and bears arrived on that continent at the close of the Pliocene.

Of the Primates, the primitive lemuroids appeared in the Eocene similarly on both continents; but in North America they soon became extinct, while in the Old World they were followed by the true apes, and still have some specialized survivors.